

Appl. No. : 10/027,519
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REMARKS

Claims 1 -49 are currently pending. Claims 1, 4, 16, 37, and 46 are amended herein.

Rejections Under 35 U.S.C. §102

Claims 1-3, 37, 38, 45, and 47-49 are rejected under 35 U.S.C. §102(b) as being anticipated by Smith et al., U.S. Patent No. 5,807,607. Claim 1 has been amended to recite “forming a second layer on the first layer, said second layer comprising a second liquid” to clarify that the second liquid is formed on the first layer after the first layer has been formed on the substrate. Claim 1 has also been amended to recite that the second liquid attracts the first liquid in the first layer, thereby transferring at least a portion of the first liquid out of the first layer into the second layer and that the second liquid remains in the second layer when the first layer is contacted with the second layer. Support for these amendments may be found in the specification, as originally filed, at paragraphs [0047] – [0049] and Figure 6.

Smith et al. teach “depositing an aerogel precursor sol upon the substrate.” The Smith et al. aerogel precursor sol comprises a metal-based aerogel precursor reactant and a first solvent comprising a first polyol. Smith et al. teach that the aged sol film may be dried “using a solvent exchange to replace the aging fluid [in the sol film] with a drying fluid.” Smith et al. at Col. 13, lines 16-19. To dry the sol film, Smith et al. teach a solvent exchange. In the Smith et al. solvent exchange, the “drying fluid” (which corresponds to the “second liquid” recited in Claim 1) *replaces* the aging fluid (which corresponds to the “first liquid” in the sol film). As amended, Claim 1 recites that the first liquid is transferred *out of* or *removed from* the first layer and the second liquid remains in the second layer when the first layer is contacted with the second layer. Smith et al. do not teach that the “drying fluid” remains in the second layer when the “drying fluid” is contacted with the sol film. Applicants respectfully submit that if the Smith et al. “drying fluid” were to remain in the second layer when the sol film and second layer are contacted, the “drying fluid” would not be able to *replace* the “aging fluid” in the sol film, as taught by Smith et al. Smith et al. therefore do not teach the invention claimed in Claim 1, as amended.

Applicants thus respectfully submit that Claim 1, as amended, is patentable over Smith et al. Claims 2 and 3, which depend from Claim 1, are also patentable over Smith et al.

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Furthermore, each of the dependent claims recites further distinguishing features of particular utility.

Claim 37 has been amended to recite “applying a first liquid comprising silicon onto said substrate and applying a hygroscopic second liquid onto said substrate after applying said first liquid.” Support for such amendment may be found in the specification, as originally filed, at paragraphs [0047] – [0049] and [0063] and Figure 6. Smith et al. do not teach application of a first liquid comprising silicon onto a substrate, followed by application a hygroscopic liquid after applying the first liquid, which is then followed by applying a third liquid onto the first and second liquids. In Smith et al., an aerogel precursor sol mixture is applied to the substrate. The aerogel precursor sol comprises a metal-based aerogel and a first solvent. Smith et al. teach that this *mixture* is applied to the substrate, forming a sol film. A “drying fluid” is then applied to this *mixture* to dry the sol film. In Smith et al., although the mixture contains first and second liquids, the first and second liquids are applied to the substrate together, at the same time, as a *mixture*. Applicants respectfully submit that Smith et al. do not teach application of a first liquid onto a substrate, followed by application of a second liquid onto a substrate, which is then, in turn, followed by application of a third liquid that attracts the second liquid when contacted with the first and second liquids, as recited by Claim 37, as amended.

Claim 37 is therefore patentable over Smith et al. Claims 38-49 are also patentable over Smith et al. because they depend, either directly or indirectly, from Claim 37. Furthermore, each of the dependent claims recites further distinguishing features of particular utility.

Rejections Under 35 U.S.C. §103

Claims 4-6, 16-20, 27, and 34-36 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dobson, U.S. Patent No. 5,874,367, in view of Smith et al., U.S. Patent No. 5,807,607. Claim 4 has been amended to recite “contacting said liquid layer with a hygroscopic liquid to remove at least a portion of said water in said liquid layer by transferring said at least a portion of said water out of said liquid layer and into said hygroscopic liquid.” Claim 16 has been amended in a similar manner to recite “treating said liquid layer with a hygroscopic liquid, thereby removing at least a portion of said water in said liquid layer by transferring said at least a portion of said water out of said liquid layer and into said hygroscopic liquid.” Support for such

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amendments may be found in the specification, as originally filed, at paragraphs [0047] – [0050] and Figure 6.

Dobson teaches removal of water from a film by “exposing the layer to a reduced pressure causing the layer to pump water out and subsequently heating the layer.” Dobson at Col. 3, lines 46-50. Dobson does not teach or suggest, and provides no motivation for, contacting a liquid layer with a hygroscopic liquid to remove at least a portion of the water in the liquid layer by transferring the water *out of* the liquid layer and into the hygroscopic layer, as recited in Claims 4 and 16, as amended. Similarly, as noted above, Smith et al. do not teach or suggest using hygroscopic liquid to transfer the water *out of* the liquid layer and *into the* hygroscopic layer, as recited in Claims 4 and 16, as amended, and rather merely teaches *replacing* water with a fluid having a lower surface tension, then subsequently allowing this fluid having the lower surface tension to evaporate. Claim 4, as amended, is therefore patentable over Dobson and Smith et al. Claims 5-15 and Claims 17-36, which depend either directly or indirectly from Claim 4 or Claim 16, are therefore also patentable over Dobson and Smith et al. Furthermore, each of the dependent claims recites further distinguishing features of particular utility.

Allowable Claim

Applicants note with appreciation that the Examiner indicated that Claim 46 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants respectfully submit that Claim 46 is allowable because it has been amended to include all of the limitations of base Claim 37 and intervening Claim 45.

Conclusion

Applicant respectfully submits that all of the pending claims are patentably distinguishable over the prior art of record. The cited references, either alone or in combination, do not teach or suggest Applicant’s claimed invention.


Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

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Respectfully submitted,

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